

I N S T R U M E N T S O F P O L I C Y

By

Karl R. Bopp, President
Federal Reserve Bank of Philadelphia

February 3, 1966

STATED MEETING OF THE BOARD OF DIRECTORS
OF THE FEDERAL RESERVE BANK OF PHILADELPHIA
CORRECTED TRANSCRIPT OF REMARKS BY
PRESIDENT KARL R. BOPP

I N S T R U M E N T S O F P O L I C Y

Mr. Chairman, at our last session I analyzed some basic objectives of economic policy on which there is rather general agreement. One conclusion from this analysis is that, despite what some of us had come to believe, it is not always possible to achieve all of these objectives simultaneously. It becomes necessary from time to time to choose among various objectives. The choice that an individual makes reflects not only his economic analysis and its application to contemporary developments but also his scale of values. The choice need not be, and, indeed seldom is, of the either/or, all-or-nothing variety. It is more apt to be a relative matter: a little more of this objective for a little less of that one.

Our value judgments extend beyond the choice of an appropriate "mix" of objectives. They extend to the means of achieving our goal. There is widespread agreement that we should do so "in a manner calculated to foster and promote free competitive enterprise," to use the language of Section 2

(Instruments of Policy, p. 2)

of the Employment Act of 1946.

Monetary policy offers a possibility of promoting our basic objectives in precisely this way. This is the case because in democracies money is a basic instrument of economic freedom through which individuals make their preferences known. Within very wide limits, each individual is free to choose how he will earn his money income. Through the democratic process of the secret ballot, citizens elect representatives to determine how much shall be devoted to specific common purposes and how the necessary funds shall be secured. Again, within wide limits, the individual is free to spend the remainder of his money income as he sees fit. He also may borrow to supplement his income, may save for the future, and may sell some assets and buy others as he sees fit to secure a maximum of welfare.

This is a continuous process. Decisions of today are influenced by the past and by expectations of the future. Today's decisions also condition the choices of the future. In the process, individuals and institutions direct the use of resources to those purposes for which they spend money and away from those for which they do not.

There is no inherent reason why the total of all the individual decisions to buy or sell, to borrow or lend, to consume or invest, to hoard or spend should inevitably add up to the exact amounts that are needed to secure our basic objectives.

Monetary policy holds out the possibility of inducing individuals of their own volition to adjust their behavior so as to produce the desired total result. It is easy enough to describe in very general terms how a flexible monetary policy can do this.

If governments, corporations, and individuals try to purchase more goods and services than can be produced at existing prices, their efforts will

(Instruments of Policy, p. 3)

tend not to increase production but prices. It would be appropriate, therefore, to make credit more expensive and more difficult to secure. Although the public would react by using its cash more efficiently, it also would be induced to postpone some of its purchases and thus remove the inflationary pressure. If, on the other hand, the public is not buying as much as can be produced at existing prices, easier and cheaper credit would tend to induce the public to step up its purchases and thus restore production and employment to capacity.

Even this highly simplified model indicates that monetary policy, which is designed to serve the long-run interest of the public, must move against short-run swings of sentiment, restraining when sentiment is too exuberant and encouraging when it is too pessimistic; hence, the money managers cannot expect to be popular.

Today, I shall discuss the tools or instruments of policy. They are of two kinds: first, the general instruments which affect the total flow of money and credit; and, second, the selective instruments which affect the direction in which credit flows. The general instruments promote free competitive enterprise; the selective instruments qualify it.

You have before you a table, prepared by Dave Eastburn, which describes the who, what, when, where, why, and how of the instruments -- or tools, as Dave calls them -- available to the Federal Reserve System. I shall not, however, limit my remarks to the System but shall refer to other places and other times as well.

(Table - Appendix A)

(Instruments of Policy, p. 4)

I. Lending Operations

A. Eligibility and Acceptability

The first instrument relates to lending operations of a central bank. Although there is a conception that central banks should be very meticulous in their lending activities, even the most venerable central banks have made some -- well, unusual, loans. For example, the London Gazette of May 6, 1695 contained an advertisement announcing that the "court of directors of the Bank of England give notice they will lend money on plate, lead, tin, copper, steel, and iron, at four per cent per annum."

I mention this pawnbroking operation only to indicate that we need not abandon consideration of novel ideas merely out of fear of violating established traditions. Given enough time, an historian probably could cite a precedent, or reasonably accurate facsimile, of any action. Even if he could not, mere tradition is not an adequate basis for abandoning a decision that is otherwise appropriate.

This is worth mentioning in connection with lending activities of central banks because there was a time when influential scholars concluded that central banks would achieve their desired purpose provided only they limited their lending (discounting) to appropriate documents.

The idea is known as the real bills doctrine or the commercial loan theory of banking. It is a tantalizing conception that has survived refutation by outstanding individuals at least as far back as Henry Thornton in 1802. In fact the lending provisions of the original Federal Reserve Act, many of which still survive, were based on this disproved theory. Current efforts of the System to eliminate these provisions are stalled in the Congress.

What then is the real bills doctrine? It is based on the plausible notion that the volume of money should be related directly to the volume of goods flowing through the productive process.

An ideal banking system, therefore, would create new money whenever a trader bought goods and would extinguish it whenever he sold. Merely to illustrate the principle, suppose that each step of the production and distribution process takes 90 days to complete. The supplier now sells raw materials to the manufacturer and draws a 90-day draft on him. After acceptance he discounts the draft at his bank. New money is created for 90 days. At the end of that period the manufacturer sells to the wholesaler and draws a 90-day draft, which he discounts. He is now in position to repay the draft drawn on him by the supplier which has come due. Ninety days later the wholesaler sells to the retailer, draws and discounts the draft to repay his own debt to the bank. And so on. The drafts are all real bills drawn against real commodities flowing through trade channels and since the sale of the commodities in the regular course of business provides the funds to repay the drafts, they are "self-liquidating."

The general idea is so tantalizing it is tragic that it contains flaws both in principle and in application. A basic weakness is that the money to which the batch of goods gives rise does not remain attached to the goods but goes on a series of visits of its own. The theory ignores the velocity of circulation of money. Let us suppose that the velocity of circulation increases by say 10 per cent and that this results in a rise of prices by 10 per cent. The batch of goods that formerly gave rise to a real bill of \$100 will now give rise to one of \$110. The additional money, with no further change in velocity, will lead to a further rise in prices, which will result in a still larger volume of real bills and money and so on ad infinitum. The real bills doctrine is not, even in principle, a self-limiting, system; it is a self-inflamatory, chain-reaction system.

There are other weaknesses in the theory. It makes no provision

(Instruments of Policy, p. 6)

for money needed to purchase services or fixed assets. Furthermore, in practice there is not such an identity between the echeance or maturity of the bill and the time it actually takes to move through the several stages of the distributive process. Furthermore, with development of the so-called clean bill with documents surrendered against acceptance instead of payment, it became possible to have more than one bill outstanding against the same batch of goods. Development of clean bills as money market instruments made it possible to issue so-called finance or accommodation bills, with no underlying goods at all. Despite their interest in doing so, even sophisticated dealers confessed they could not distinguish a "real" bill from any other.

The lending and discounting operations of the Federal Reserve Banks are conducted in accordance with the Federal Reserve Act and Regulation A of the Board of Governors.

In our banking system it is important that there be an "escape valve" to prevent pressure from concentrating at times with undue severity at particular points -- either for reasons independent of monetary policy (e.g., a local catastrophe) or as a result of what is intended as general pressure.

It is for this reason that member banks have the privilege, under appropriate circumstances, of borrowing from their Federal Reserve Banks. The borrowing privilege, it should be noted, is not to be used to scalp a profit should the yield on Treasury bills, for example, be above the discount rate. The Federal Reserve Banks supervise their loans to member banks to see that they are for proper purposes. We go to great lengths to assure impartial administration of our discount window. Consideration of the report on borrowing is a standard item on the agenda of your biweekly meetings.

Incidentally, if you ever hear rumors of discriminatory treatment, I wish you would tell us about them. For understandable reasons such rumors

(Instruments of Policy, p. 7)

arise occasionally -- not in periods of easy money but in periods of restraint. Occasionally, country member banks allege that Philadelphia banks receive preferred treatment. We have had enough conversations with Philadelphia members to appreciate that they at times feel we are too gentle with the country members. We do not, incidentally, adjust our administration to changing conditions in the credit market. I described the principles under which we operate before the Pennsylvania Bankers Association in May 1958 and the talk was published in our BUSINESS REVIEW (June 1958). I am asking you to report any allegations of favoritism that come to your attention because it is critically important not only that we remain impartial but that we maintain a reputation for objectivity.

B. Bank Rate

Price, or the rate that is charged, is the most important condition that a central bank imposes in extending credit. It has, understandably, received most attention. It is not, however, as we have seen, the only condition. It is not even the oldest means of controlling the amount of credit extended.

The Bank of England, for example, maintained its rate at 5 per cent on inland bills from 1719 and on foreign bills from 1773 to 1822. Henry Thornton, an outstanding financial leader, recommended in 1802 that the Bank vary its rate as a means of regulating the volume of circulating medium, but his advice was not followed. He was virtually alone in his view. Ricardo, the great classical economist, understood that the volume of lending would be influenced by the relationship between bank rate and the rate of profit but he did not discuss changes in the rate as an instrument of policy. The governor and deputy governor of the Bank actually denied to the Bullion Committee in 1810 that the rate had any influence on the volume of good bills offered for discount.

Instead of increasing the rate, the directors rationed their credit

(Instruments of Policy, p. 8)

and "set limits to their advances according to circumstances, and as their discretion may direct them." They "contracted their issues of paper . . . [when] their apprehensions [were] excited by the reduction of their stock of gold." Instead of decreasing the rate, they extended the list of collateral on which they would extend credit.

The Bank of France maintained a uniform rate from 1820 to 1847. The Bank of England was subject to the 5 per cent usury law until 1837. It was not until the 1840's that the rate became the premier instrument of policy. Eventually the rate was changed to meet every gust of wind that blew. It was changed 202 times from 1855 to 1874, including 24 changes in the single year 1873.

Various theories were gradually developed as to the nature of an "effective rate." Most widely taught at one time was the theory that to be effective, the bank rate must be above the market rate. Of course, there are many market rates, and part of the analysis involved definition of the appropriate market rate. Underlying the basic idea, it seems to me, is a judgment that the only danger from monetary policy is inflation. So long as the only basic goal of policy was convertibility and so long as depression was viewed either as an inevitable aftermath of inflation or as an act of God, the argument convinced many.

The bias of the theory is reflected in its application. As market rates rise, the bank is compelled to increase its rate to remain above. As market rates decline, it must defer action, so that its own rate remains above, even after the change. There may be times, of course, when it is appropriate for the bank rate to follow market rates -- particularly when market rates are subject to influence by other instruments -- but there are other times when it is not appropriate. The theory is not of universal applicability.

Another theory related effectiveness to the volume of discounts actually held by the central bank. One naive variant of the idea simply held that bank rate is effective if it holds down the volume of borrowing to low levels. This version is similar to the idea that bank rate should be above market rate. If bank rate is above actual market rate on identical paper, one would not expect much -- if indeed any! -- paper to reach the bank. Another naive variant lies at the opposite extreme and holds that bank rate can be effective only if a considerable volume of paper is held by the bank. It is felt that only under such circumstances can bank rate be meaningful in affecting market conditions.

A somewhat more sophisticated version of the theory is concerned not with the absolute level of borrowing but with the relationship between changes in the rate and changes in the central bank's portfolio. In this version the purpose of an increase in the rate is to discourage borrowing from the central bank. If, therefore, an increase in the rate is followed by a reduction in the portfolio, the increase may be said to have been effective. Similarly, a reduction in the rate would be judged effective if it led to an increase in the portfolio.

For purposes of economic policy, however, this is a rather narrow conception. Our major interest is not what happens to the central bank portfolio but what effect the actions of the central bank have on the economy. The first theory that takes this aspect into account measures effectiveness by reference to market rates. An increase is viewed as effective if it is followed by increases in market rates; and a decrease in bank rate is effective if it is followed by decreases in market rates.

The next theory goes one step further. Votaries of this theory argue that the central bank should not be interested in market rates as such but should

(Instruments of Policy, p. 10)

be concerned with the volume of money. They, therefore, measure the effectiveness of a change in the rate by the subsequent behavior of either the supply of money or a proxy, such as the volume of reserves of the commercial banking system.

Each of these theories focuses on a particular aspect of discounting. Each contributes something, though occasionally in a negative way, to our understanding of the role of the discount rate in the economy.

The implication of this conclusion is that it is desirable to approach the problem from a much broader point of view. Our ultimate interest is to achieve as nearly as may be the objectives that I discussed last time. It is appropriate, therefore, to measure the effectiveness of any instrument of policy in terms of its contribution -- in conjunction with other instruments -- to those objectives. This is a more complex undertaking and we shall have numerous occasions to discuss it during the course of the year.

C. The Tradition against Borrowing

In days when bank failures were common, an early sign of weakness in a bank was that it borrowed money -- other than by deposit. Banks disliked showing borrowings on their published statements. Although some banks have recently abandoned the tradition against borrowing, many still hold to it. Banks that anticipate a shortage of reserves on the semiannual call dates usually borrow in larger amounts for a day or two before the end of June and December so that they can meet their requirements, repay their borrowing, and still show no borrowing on their call report or published statement.

The Federal Reserve System has encouraged member banks not to borrow from the Reserve Banks except for appropriate purposes. Many members in this District and elsewhere take pride in never having borrowed from their Reserve Bank. This tradition affects the amount of borrowing from the Reserve Banks.

II. Open Market Operations

The relationship between central banks and government finance is intimate and reaches back to the origin of such banks. The Bank of England was founded in 1694 because the standing of government credit, after the so-called "stop of the Exchequer" by Charles II, was so low that William and Mary had great difficulty financing the war with France. Creation of the Bank of England was authorized in the Ways and Means Act of 1694^{1/}, not in a separate bank act. Similarly, Napoleon created the Bank of France in 1800 to help finance his military ventures. Most countries with considerable experience in central banking have witnessed episodes in which the view of the government has differed from that of the central bank concerning the methods of extending central bank credit to the government, its amount and the terms and conditions.

Central banks experimented from time to time with purchases and sales of government securities in the market to achieve a variety of purposes. Early in the Nineteenth Century the Bank of England bought Exchequer Bills on the market when it wanted to expand its circulation and sold them when it wished to contract. In periods of strain it occasionally sold securities, presumably to afford greater accommodation to commerce. Such operations are comprehensible only on the assumption that funds did not flow freely among segments of the market and that the help of the Bank was needed to redistribute credit. It is perhaps worth mentioning that such an action in the crisis of 1847 resulted in recorded criticism of the governor and deputy governor -- a rare experience. Central banks also bought securities either in an attempt to increase earnings or to invest what they considered excess funds.

^{1/}Act 5 & 6 Wm. & Mary, cap. 20. The full title of the Act, though long enough, does not even mention the Bank of England. It reads: "An Act for Granting to Their Majesties several Rates and Duties upon Tunnage of Ships and Vessels, and upon Beer, Ale, and other Liquors, for Securing certain Recompences and Advantages in the said Act mentioned, to such Persons as shall Voluntarily Advance the sum of Fifteen hundred thousand Pounds towards carrying on the War against France." (Acres, W. Marston, The Bank of England From Within, 1694-1900, vol. I, p. 9, Oxford University Press, London, 1931.)

An early theory of open market operations as an instrument of monetary policy is that sales of securities can be used to make the discount rate "effective." It grew out of a somewhat incongruous set of assumptions. Suppose a central bank wishes to tighten credit when bank rate already is considerably above market rate. An increase in bank rate may simply widen the margin between bank rate and market rate. What is desired, however, is an increase in market rate. If, now, the central bank could sell securities, it could force market rate to rise and thus force the market to borrow from the bank. The amount of such borrowing, in turn, could then be controlled or influenced by the higher bank rate.

In the light of what has been said about the development of bank rate theory, it is understandable that early theory of open market operations would have been one-sided and dealt only with sales. It did, however, contain some important ideas which, unfortunately, were not adequately developed or comprehended.

One of these ideas is that open market operations, the discount rate, and the volume of discounts are interrelated. The Federal Reserve System rediscovered this idea as it analyzed its early frustrations with open market operations after the First World War.

You will remember from your own experience and our discussion two weeks ago that the First World War was followed shortly by a severe depression. The depression was accompanied by sharp liquidation at commercial banks and by repayments of borrowings at the Federal Reserve Banks. A number of Reserve Banks became concerned about how they might earn enough to pay their expenses. Some concluded that the appropriate way would be to buy Government securities. There is an interesting footnote to Federal Reserve history that concerns the effects of these decisions on the Government securities market, the Treasury,

and the relationship between the Federal Reserve Banks of New York and the other Reserve Banks. Our primary interest, however, is in the intimate relationship between open market operations and borrowing at the Reserve Banks as a whole. The relationship is not as precise as a mathematical function because it is influenced by other factors, such as the intensity of demand for credit. A close relationship, however, arises from the reaction of member banks to open market operations. If member banks are in debt to the Federal Reserve when the System buys securities to put funds into the market, the member banks will use some of these funds to repay borrowings rather than to expand credit. Contrariwise, when the System sells securities, member banks may replace some of the funds by borrowing from the Reserve Banks. There is an inverse relationship between reserves provided by the System through open market operations at its own initiative and reserves provided by the System through lending at the initiative of the member banks.

It does not follow, however, that nothing important has happened or that open market operations are ineffective. Usually borrowed reserves are more expensive than reserves provided via purchases of securities and there are both the tradition against borrowing from the System and the administration of the discount window at the Reserve Banks.

The intimate relationships between the two instruments explains why a practitioner usually prefers not to become involved in the semantic morass of isolating the degree to which each is effective in some meaningful sense. These two instruments are complementary, as indeed are all the general instruments of monetary policy.

At our next session I shall discuss the directives which the Federal Open Market Committee gives to the Manager of the Account. It may be worthwhile at this point to describe briefly how he carries out his instructions.

Suppose that the directive instructs him to maintain firmer conditions in the money market. He will sell Government securities. The sales will depress the prices (increase the yields) of the securities sold. Dealers will have larger portfolios and will reduce their prices. Payment for the securities will absorb reserves from the banking system and hence put pressure on the banks to reduce their loans and investments, thus reinforcing the rise in rates and spreading it out to other markets and other securities. The purpose, of course, is to make borrowing more difficult and more expensive so as to achieve the ultimate purpose of preventing expenditures throughout the economy from reaching inflationary levels.

III. Reserve Requirments

The third general instrument is the power lodged in the Board of Governors to require member banks to hold specified amounts of reserve against their deposits.

I must confess that I long shared the view of those monetary theorists who hold that maintenance of a specified relationship between reserves and deposits is an indispensable ingredient of an effective monetary policy. The logic of the case is straightforward. If commercial banks keep a fixed relationship between their reserves and their deposits (which are the largest part of the supply of money), then the central bank which can determine the quantity of reserves for the System can control the volume of money. If, however, the commercial banks can change their reserve ratio at will they can nullify the efforts of the central bank: (1) by increasing the ratio rather than expanding credit when the central bank wishes to expand and (2) by decreasing the ratio rather than contracting credit when the central bank reduces the volume of reserves.

There is nothing wrong with this logic but the assumptions are too

(Instruments of Policy, p. 15)

rigid and are based on the partial experience of a few countries. It is, of course, part of modern American banking tradition that commercial banks be required by law to maintain minimum reserves against their deposits. In England there was a long-standing tradition as to the appropriate relationship between reserves and deposits. It is, of course, reasonable to suppose that commercial banks in these countries will usually keep their actual reserves at approximately the legal or customary minimum. The reasons are obvious. A bank will not ordinarily keep less than its required reserve because of legal penalties or loss of prestige and customers. It will not ordinarily keep more reserves than required because this will result in loss of income, since reserves are nonearning assets. So long as the minimum requirement is set higher than the bank would adopt of its own volition, it will not hold excess reserves.

Even in England and the United States, however, there have been times when banks desired greater liquidity or reserves than they were required to maintain. During the great depression banks increased their reserve ratio rather than expand their loans and investments. Does this mean that the central bank is helpless? Not necessarily. It does mean that the central bank must be able to supply more reserves or liquidity than the banks of their own volition wish to hold. This is the real heart of the matter. Can the central bank create more reserves or limit their creation to less than the banks desire to hold for whatever reason (law, custom, prejudice, inertia)?

This conclusion is based on both logic and experience. From its foundation in 1875 until the First World War the German Reichsbank achieved its objective of maintaining convertibility of the mark even though it operated in a very loose-jointed banking and financial system. Among the impediments were: (1) the Reichsbank had no continuing knowledge of the amount of reserves actually held by the commercial banks; (2) the operations of the Reichsbank

(Instruments of Policy, p. 16)

were such that it could not have achieved a specified level of reserves even had it wished to do so; (3) the commercial banks were not governed either by law or custom as to their reserve ratio which in fact declined very substantially over the period as a whole and varied significantly in the short run. In short, the Reichsbank operated without any of the conditions that some analysts consider indispensable to effective monetary policy. What it did accomplish was its basic objective! It did so, in my view, by making its credit (it conducted a large commercial banking business as well as operated as a central bank) cheaper or more expensive than the commercial banks desired. Their reaction to the conditions enforced by the Reichsbank achieved its purposes.

The ultimate power of a central bank to enforce its will lies in its ability to create new money or reserves -- by acquiring earning assets -- and to destroy existing money or reserves by disposing of earning assets.

It does not follow that I would advocate elimination of reserve requirements and the power to change them from the kit of tools possessed by the Federal Reserve System. The reasons for citing the German experience are to indicate the basic nature of our problem and to illustrate that even a primitive system can be made to work. It does not follow that it would be the best system for the United States in 1966.

I move next to the general level of reserve requirements not as a tool of monetary policy but as a matter of equity. I confess that observation of the operations of many kinds of financial institutions has induced me to change my approach to this problem. The change in approach, in turn, has changed my conclusions.

My initial approach to the problem began with the fact that the issuance of money is a sovereign function. It is, therefore, appropriate

(Instruments of Policy, p. 17)

for the Government to impose conditions which in effect exact a payment from institutions which are authorized to exercise this function. This approach continued with the fact that demand deposits are money. It is, therefore, appropriate to require commercial banks as money-creating institutions to keep part of their assets in nonearning reserves. These reserves, in turn, are created by the central bank when it acquires earning assets. Excess earnings of the central bank can then be returned to the Government as payment for its delegation of the money-issuing privilege.

I took it for granted that the authority (and it still seems obvious until one analyzes the process) to issue money is inherently a valuable privilege and that, therefore, "fairly high" (a weasely vague phrase!) reserve requirements would be "equitable." The logic of this approach implies that reserve requirements be uniform against all demand deposits subject to check, with a possible qualification for inter-bank deposits. Under such a system each bank would contribute (by way of nonearning reserves) to the Government in proportion to the amount of money it had created. Yet, nonmember banks may be, and in Pennsylvania are subject to lower requirements than members of the Federal Reserve System.

There are several other factors that must be evaluated in determining the value to an individual bank of the privilege of issuing money. First of all, such money is not issued without cost. The bank must perform financial services for its customers. It may, of course, charge for these services. Any individual bank, however, is limited in the amount of money it may issue by its competitive position in the economy. As banks compete with each other for the deposits of customers, they reduce the profitability of the money-issuing privilege. Much of the value of the privilege remains not with the banks but is transferred competitively to the public. Meanwhile commercial banks compete not only

(Instruments of Policy, p. 18)

with each other but with other financial intermediaries. The value of the money-issuing privilege might be measured by difference in profitability between commercial banks and other financial intermediaries. Such scattered information as I have seen does not suggest that the privilege is worth very much.

I have, therefore, come to the tentative conclusion that equity between member and nonmember banks and between commercial banks and other financial intermediaries does not call for very high reserve requirements. It is worth recalling in this connection that the Federal Government secures roughly half of net income via corporate income taxes.

The general level of reserve requirements has derivative but important effects on open market operations. The higher the level of requirements the larger the purchase of securities that would be needed to support a given increase in the volume of member bank deposits. Stated another way, this means that the effect of a given open market operation varies inversely with the level of reserve requirements. If requirements are low, a given operation will have a large effect. This effect is taken into account, of course, in planning such operations. The logical implication of the relationship is that errors of projection in the level of reserves have greater impact when the level of requirements is lower. The impact, however, will be felt in the money market and actual operations can be adjusted appropriately if the directive to the manager is written in terms of conditions in the money market.

The Board of Governors has authority to establish minimum reserve requirements for member banks. The limits of this authority are 10 per cent to 22 per cent for demand deposits of Reserve City banks, 7 per cent to 14 per cent for demand deposits of other member banks, and 3 per cent to 6 per cent for time deposits at all member banks. A reduction in requirements makes

(Instruments of Policy, p. 19)

additional funds available for lending and investing; an increase in requirements reduces the funds available and would force contraction. In important ways a reduction in requirements is similar to a purchase of securities in the open market and an increase is similar to sales.

There are some important differences between the two instruments. A change in requirements affects immediately and directly every member to which it is applicable. The effects of an open market operation affect most banks only indirectly. The minimum quantitative effect on "free" reserves of a change in requirements is large. In principle, of course, changes could be made in very small fractions of one per cent, but the operating and other practical problems that would be created by very small and frequent changes in requirements make such use inappropriate. Open Market operations, on the other hand, can be conducted in any needed volume, large or small, and their direction can be changed at any time without ill effects.

That, Mr. Chairman, concludes my introductory statement on the general instruments of money policy. In view of the time, I suggest postponement of discussion of selective instruments until a later meeting of the Board of Directors.

#